

**DETAILED ACTION**

***Election/Restrictions***

1. Claims 3 and 4 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 23, 2009.

***Claim Rejections - 35 USC § 112***

2. Claims 1 and 5-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, it is unclear as to whether or not the presence of non-irradiated powder particles having a particle size of 10 um or less is required given that said particles account for "less than 30% by mass", which range necessarily includes zero as a lower limit.

In claim 1, line 8, "becomes", as opposed to --become--, is questioned.

In claim 1, line 10, "are", as opposed to --is--, is questioned.

In claim 1, the language "wherein said powder particles having a particle size of 10 um or less becomes more than 30% by mass of the modifier, when the non-irradiated modifier is irradiated" is confusing and not readily understood. Do applicants intend to recite --wherein the amount of powder particles having a particle size of 10 um or less becomes more than 30% by mass of the modifier, based on 100% by mass of the modifier, when the non-irradiated modifier is irradiated"?

In claim 1, lines 12 and 14, "monomers", as opposed to --monomer--, are questioned.

In claim 5, line 2, "monomers are", as opposed to --monomer is--, is questioned.

In claim 12, lines 2 and 3, "monomers", as opposed to --monomer--, is questioned

In claims 14 and 15, the recitations "a core" and "a shell" are indefinite in that it is unclear just how many cores and shells are present in the graft copolymer.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 5-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 5,017,631 (Rauch et al) as per reasons of record.

Rauch et al disclose non-irradiated powder particles which meet the requirements of applicants' graft copolymers both in terms of compositional makeup and particle sizes. In this regard, attention is directed to the "core/shell emulsion polymer" comprising a acrylic rubber core and a methyl-methacrylate-based shell described at column 4, lines 43-46 (meeting the compositional requirements of applicants graft copolymer) and the particle sizes set forth in Figures 1-5, etc. (meeting the particle sizes governing applicants' spray-dried graft copolymer). That is, the emulsion polymers are spray dried utilizing similar spraying conditions as described by applicants' specification

(see present specification pages 17-18, examples, etc., and Rauch column 6, lines 38-55, etc.). The spray-dried particles predominately have particle sizes of 20  $\mu\text{m}$  or more as compared to the proportion of particles having a size of less than 10  $\mu\text{m}$ . Thus, the non-irradiated powder particles of the reference are similar, in both chemical make up and preparation process, to the non-irradiated emulsion polymers presently claimed. As to the particle size of the latex, patentees disclose an optimum particle size ranging from 0.08 to 1 micron (equivalent to 80 to 1,000 nm), which range clearly embraces applicants' 600 to 900 nm claimed range.

While Rauch et al do not expressly set forth an example of a graft copolymer latex having an average particle size of 600 to 900 nm, they clearly disclose and embrace said particle sizes within their disclosed optimum particle size range. Accordingly, it would have been obvious to one having ordinary skill in the art, and within the purview of the inventive scope of the reference, to have employed graft copolymer latices governed by average particle sizes falling within the scope of the present claims with the reasonable expectation of success.

As the applicants' "wherein" recitation, the position is taken that said limitation appears to be merely functional and does not recite a positive limitation. Since the non-irradiated particles of the reference meet the requirements of applicants' graft copolymers both in terms of compositional makeup and particle sizes, one of ordinary skill in the art would have expected that the spray-dried graft copolymers of the reference would have been capable of generating "more than 30% by mass" of powder particles having a particle size of 10  $\mu\text{m}$  or less upon subjection to the same irradiation

treatment as applicants'. That is, since the particles are the same, it would be reasonably expected that subjecting them to the same irradiation conditions would give rise to the same results set forth in applicants' claimed proviso.

### ***Response to Arguments***

5. The arguments filed October 13, 2011 have been fully considered but they are not persuasive.

It is applicants' contention that Rauch et al fail to disclose or suggest a graft copolymer having an average particle size of 600 to 900 nm in the latex. While Rauch et al do not expressly set forth an example of a graft copolymer latex having an average particle size of 600 to 900 nm, patentees clearly disclose and embrace said particle sizes within their optimum particle size range of 0.08 to 1 micron. Accordingly, absent evidence of unusual or unexpected results for the lower (600 nm) and upper (900nm) limits of applicants' range, as compared to particle sizes close to said limits but outside the scope of applicants' range, e.g., 599 nm and 901 nm, no patentability can be seen in the presently claimed subject matter. Applicants contend that their 37 CFR 1.132 declaration shows that a graft copolymer having an average particle size of 250 nm in the latex, according to Rauch et al, has inferior properties as compared to a graft copolymer having a 600 nm, according to the present invention. Said comparison between a particle size of 250 nm to a particle size of 600 nm, however, does not serve to establish criticality for applicant's claimed lower and upper limits defining the claimed 600-900 nm particle size range. Accordingly, no patentability can be seen in the presently claimed subject matter.

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANA WOODWARD whose telephone number is (571)272-1082. The examiner can normally be reached on Monday, Tuesday, Thursday and Friday (7:30-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ana L. Woodward/  
Primary Examiner  
Art Unit 1765